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Ehrb.—*var. alternans*, Breb.—*St. punctulatum*, Breb.—*St. polymorphum*, Breb.—*St. cyrtoceron*, Breb.—*St. paradoxum*, Meyen.—*St. gracile*, Ralfs.—*St. hirsutum*, Breb.—*St. teliferum*, Ralfs.—*St. Saxonicum*, Buluh.—*St. polytrichum*, Perty.—*St. spongiosum*, Breb.—*St. controversum*, Breb.—*St. vestitum*, Ralfs.—*St. oxacanthum*, Archer.—*St. furcigerum*, Breb.—*St. lunatum*, Ralfs.—*St. munitum*, Wood. The following four are considered new species.

St. bibrachiatum, n. sp., segments subquadrangular, or cuneate, gradually widening upward, truncate at ends, lateral extremities each tapering into a single, elongate divergent colorless process, rough or denticulate on the margins. Arms two to three times as long as the body. End view elliptical, with a single process at each end, tips obtuse dentate.—.00187"—.00225" long with arms. .0015"—.0016" wide.

St. cuneatum, n. sp. Frond as long as wide. Segments broadly cuneate with convex bases, producing in front view deep constrictions between them. Sides converging from the base upward to a truncate end, each with three to six sharp teeth, spaces between them deep inverted crenulations. End view triangular, sides somewhat concave, angles bi-trifid, with six radiating central processes rarely extending beyond the sides. .00175"—.00225" each way.

St. binaculeatum, n. sp. Frond smooth, front view subelliptical, inner margins more convex than the outer, angles with two spines separated at the base. End view triangular, sides slightly concave, angles bluntly rounded with two rather long more or less divergent spines on each. .0015" long, .002" wide.

St. cruciatum, n. sp. Frond small, smooth, front view cruciform, the arms mammillare, sinus wide, obtuse angled. End view three or four lobed, each slightly tapering, ends rounded with a number of more or less diverging setae, as long as the lobes, on the ends of each. .001" without setae.

17. *Xanthidium*, Ehrb.—*X. fasciculatum*, Ehrb.—ditto *var. antelopaeum*, Ktz.—ditto *var. polygonum*, Ehrb.

18. *Arthrodesmus*, A. convergens, Ehrb.

I shall be pleased to hear from any one interested in this subject, especially with a view to add to the knowledge of this kind of plants.

F. W.

§ 128. A Two Day's Excursion.—The geology of Grayson County, Ky., at the station called Big Clifty, is peculiarly adapted to the growth of ferns. The sand stone which underlies the surface is quite soft and disintegrates readily. The country is very hilly, and the streams, which at times rise rapidly, have worn their beds into immense gullies. Big Clifty Creek bridge, 62 miles from Louisville, on the Paducah R. R., from cliff to cliff, is one hundred and thirty two feet high. The following is a list of ferns collected in a recent excursion by Major W. J. Davis and myself, within a circle of a radius not greater than two and one half miles. *Aspidium acrostichoides*, Swartz; *A. spinulosum*, Swartz; *A. spin.*, var. intermedium; *A. Noveboracense*, Swartz; *A. marginale*; Swartz; *Adiantum pedatum*, L.; *Botrychium Virginicum*, Swartz; *Camp-*

tosorus rhizophyllus, Link; Phegopteris polypodioides, Fée; Polypodium vulgare, L.; P. incanum, Swartz; Pteris aquilina, L.; Asplenium pinnatifidum, Nutt; A. Trichomanes, L.; A. ebeneum, Ait.; A. montanum, Willd.; A. angustifolium, Michx.; A. thelypteroides, Michx.; A. Filix-femina, Bernh.; A. Bradleyi, Eaton; Onoclea sensibilis L.; Cystopteris bulbifera, Bernh.; C. fragilis, Bernh.; and Osmunda interrupta, Michx.—twenty-four varieties in all.

A smooth-faced sand stone which had fallen from the cliff on the bank of Meeting Creek, thirty-five feet wide at the base, nearly upright, and thirty feet high, shaped much like a sextant resting on one of the radii, stands facing the north, and is perfectly shaded from the sun by the hills. The face of the rock is covered with most luxuriant Polypodium vulgare—some of the fronds being fully fourteen to sixteen inches in length—to within about two or three feet of the ground, where Camptosorus finds an equally suitable situation for propagation and continuance. I have no doubt, had we been a month or two earlier, we might have added quite materially to our list. Our chief endeavor was to procure three ferns, A. Bradleyi, A. montanum, and Trichomanes radicans, so that the summits of the hills were but imperfectly explored.

I have a few dried specimens of Asplenium pinnatifidum and A. montanum which I would exchange, by mail or express, at my expense, for some of the living roots of rare native ferns.

C. C. HASKINS.

New Albany, Ind.

§ 129. *Trees of the United States.*—"A Catalogue of the Forest Trees of the United States which usually attain a height of sixteen feet or more, with notes and brief descriptions of the more important species, illustrating the collection of forest-tree sections on exhibition by the Department of Agriculture at the Centennial Exhibition, Philadelphia. Prepared by Geo. Vasey, M.D." Washington, 1876. The Department of Agriculture in making this collection, and in publishing the catalogue has done good service. Very competent persons were engaged to collect. About 400 species are enumerated, the greater portion of which are represented by specimens in the collection. Of Oaks there are about 37 species; of Pines, 35; of other Conifers, 43; of the Rose family, 37; of Leguminosæ, 21; of Ericaceæ, 8; of Maples, 8; Magnolias, 7; Ash, 11; Elms, 6; Walnuts and Hickories, 13; Poplars, 8; and Birch, 6 species. An Anona, or Custard Apple, a Chrysophyllum, or Star Apple, and a Palm, Thrinax, are new to our flora. The Catalogue is a pamphlet of 38 octavo pages, and we presume can be obtained from the Department.

Terms—One Dollar per annum beginning with the January number, 12 cents for postage. For the Botanical Directory 30 cents. Supplement to Directory, 10 cents. Vols. I-V, with index, and photograph of Dr. Torrey, \$3.75. Copies of Constitution and By-Laws of the Club, 25 cents. Address, WM. H. LEGGETT, 224, E. Tenth Street, New York. Money Orders on Station D., P. O., N. Y. All subscriptions or orders filled only on receipt of the money.

The Club meets regularly the last Tuesday of the month in the Herbarium, Columbia College, at 7½ P.M. Botanists are invited to attend. DR. THURBER, the President of the Club, may be found at 245 Broadway.